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<b>(21) International Application Number:</b> PCT/US99/23243 <b>(22) International Filing Date:</b> 5 October 1999 (05.10.99)  <b>(30) Priority Data:</b> 60/103,120 5 October 1998 (05.10.98) US 60/111,590 9 December 1998 (09.12.98) US  <b>(71) Applicants:</b> THE B.F. GOODRICH COMPANY [US/US]; 4020 Kinross Lakes Parkway, Richfield, OH 44286-9368 (US). PENN STATE RESEARCH FOUNDATION [US/US]; 304 Old Main, University Park, PA 16802 (US).  <b>(72) Inventors:</b> LIPIAN, John-Henry; Apartment 206, 12631 Walnut Hills Drive, North Royalton, OH 44133 (US). RHODES, Larry, F.; 3036 Vincent Road, Silverlake, OH 44224 (US). GOODALL, Brian, L.; The Albemarle Cor- poration, Research and Development, 8000 GSRI Avenue, Baton Rouge, LA 70820 (US). BELL, Andrew; 1511 Lewis Drive, Lakewood, OH 44107 (US). MIMNA, Richard, A.; Apartment 1, 2679 Hampshire Road, Cleveland Heights, OH 44106 (US). FONDRAN, John, C.; Apartment 1, 2504 Derbyshire Road, Cleveland Heights, OH 44106 (US). HENNIS, April, D.; 626 South Pugh Street, State College, PA 16801 (US). ELIA, Christine, N.; 1231 South Allen Street, State College, PA 16801 (US). POLLEY,	<b>Jennifer, D.;</b> 204 Kent Drive, Exton, PA 19341 (US). <b>SEN,</b> <b>Ayusman;</b> 1529 Chaumont Avenue, State College, PA 16801 (US). <b>SAIKUMAR, Jayaraman;</b> 12185 Waywood Drive, Twinsburg, OH 44087 (US).  <b>(74) Agents:</b> DUNLAP, Thoburn, T. et al.; The B.F. Goodrich Com- pany, 9921 Brecksville Road, Brecksville, OH 44141-3289 (US).  <b>(81) Designated States:</b> AE, AL, AU, AZ, BA, BB, BG, BR, BY, CA, CN, CZ, EE, GE, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, RO, RU, SD, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).  <b>Published</b> <i>With international search report.</i>	
<b>(54) Title:</b> CATALYST AND METHODS FOR POLYMERIZING CYCLOOLEFINS  <b>(57) Abstract</b>  Methods for the addition polymerization of cycloolefins using a cationic Group 10 metal complex and a weakly coordinating anion of the formula: $[(R')_2M(L')_x(L'')_y]_b [WCA]_d$ wherein $[(R')_2M(L')_x(L'')_y]$ is a cation complex where M represents a Group 10 transition metal; R' represents an anionic hydrocarbyl containing ligand; L' represents a Group 15 neutral electron donor ligand; L'' represents a labile neutral electron donor ligand; x is 1 or 2; and y is 0, 1, 2, or 3; and z is 0 or 1, wherein the sum of x, y, and z is 4; and [WCA] represents a weakly coordinating counteranion complex; and b and d are numbers representing the number of times the cation complex and weakly coordinating counteranion complex are taken to balance the electronic charge on the overall catalyst complex.		